

Evaluation of Antibody Titer Produced in Layer Chicken after Vaccination with an Experimental *Ornitobacterium rhinotracheale* Vaccine

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Abstract : Respiratory infections are the most important diseases that affect poultry. *Ornithobacterium rhinotracheale* is a bacterium that causes respiratory infections including alveolar inflammation and pneumonia in birds. The aim of this study was to evaluate antibody titer against *Ornithobacterium rhinotracheale* in layer chicken sera after vaccination with an experimental ORT vaccine that produced in Razi Vaccine and Serum Research Institute. Cultured bacteria were inactivated by formalin, and controlled tests were conducted on it. The obtained antigens were formulated using Montanide oil and were homogenized using homogenizer. Eighty SPF chickens were kept until the age of 14 days under existing standards for temperature, humidity, and light. At the age of 14 days, chickens were divided into 3 groups. The first group included 50 chickens injected with prepared ORT vaccine, the second group, as control group, included 15 chickens injected with sterile PBS to get stress of infection and the third group included 15 chickens with no injection performed to them. All 3 groups were kept in separate cages at same room. Blood samples were regularly taken from the chickens every week for serum separation and evaluation of antibody titer. During the fifth week post vaccination, booster vaccine was injected into the chickens of vaccinated group. The chickens were inspected every day in terms of mortality as well as any injection site reactions. Three weeks after the booster injection, blood samples were taken from all chickens of all groups, and sera were isolated. The sera of immunized (vaccinated) SPF chickens with ORT vaccine as well as that of SPF chickens in the control groups were reviewed according to the recommendations of ELISA kit manufacturer to examine the chicken's humeral immune response to the studied vaccine. Potency, stability and sterility tests were also performed on the above mentioned vaccine. Results obtained indicate high antibody titer in sera of chickens vaccinated with experimental ORT vaccine as compared with the control groups that emphasize the ability of experimentally prepared ORT vaccine to stimulate humoral immune response of chicken. After the second injection, antibody titer increased and remained almost stable up to 9 weeks after the injection. ORT vaccine can cause potency in chickens and can protect them against disease.

Keywords : antibody, layer chicken, *Ornithobacterium rhinotracheitis*, vaccine

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